Nominalizations: From Features to Applications in Abstracts of Linguistics Academic Papers

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Abstract- This article analyzes several features and applications of five types of nominalizations in abstracts from linguistics academic papers under the guidance of grammatical metaphor raised by Halliday. By adopting a mixture of qualitative and quantitative methods, frequencies of each type of nominalization were calculated and features of these nominalizations were discussed. Results revealed that process nominalization occupied 84.8% and quality nominalization accounted for 13.4%. However, circumstance nominalization and relator nominalization only accounted for 0.2% and 1.1%, respectively. Furthermore, the author only found 6 instances of zero nominalization. Additionally, it is found that process nominalization can condense information, increase the level of abstraction of abstracts and form fixed collocation patterns in abstracts. Quality nominalization can achieve impersonalization, but meanwhile increase the distance between readers and writers. Circumstance, relator and zero nominalization are rarely used in abstracts, because they increase the complexity of abstracts, weaken the logical link and add some unnecessary information. On the basis of the findings, practical implications are discussed.

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NOMINALIZATIONSFROMFEATURESTOAPPLICATIONSINABSTRACTSOFLINGUISTICSACADEMICPAPERS

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Nominalizations: From Features to Applications in Abstracts of Linguistics Academic Papers

Lei Yue [α], Jiayu Wang [σ] & Yi Zhang [ρ]

Abstract- This article analyzes several features and applications of five types of nominalizations in abstracts from linguistics academic papers under the guidance of grammatical metaphor raised by Halliday. By adopting a mixture of qualitative and quantitative methods, frequencies of each type of nominalization were calculated and features of these nominalizations were discussed. Results revealed that process nominalization occupied 84.8% and quality nominalization accounted for 13.4%. However, circumstance nominalization and relator nominalization only accounted for 0.2% and 1.1%, respectively. Furthermore, the author only found 6 instances of zero nominalization. Additionally, it is found that process nominalization can condense information, increase the level of abstraction of abstracts and form fixed collocation patterns in abstracts. Quality nominalization can achieve impersonalization, but meanwhile increase the distance between readers and writers. Circumstance, relator and zero nominalization are rarely used in abstracts, because they increase the complexity of abstracts, weaken the logical link and add some unnecessary information. On the basis of the findings, practical implications are discussed.

Keywords: features; nominalization; abstracts; grammatical metaphor.

I. Introduction

Since grammatical metaphor was firstly raised by Halliday (1985) in *An introduction to grammatical metaphor*, it has always been a popular research topic among academic field. Traditional linguist Jesperson (1924) made first attempt on nominalization and called it "nexus substantive". Then Bloomfield (1993) restricted his study to the analysis of the surface structure, thus easily confused the difference between nominalization and common noun groups. Besides, Chomsky (1970) classified nominalization into gerundive, derived and mixed, but similarly, being limited to the sentence level. Then, Halliday gave nominalization a comprehensive interpretation from the perspective of grammatical metaphor and he found that a lot of nominalization existing in scientific discourses (Zhang & Dong, 2014). Scholars at home also carry out a lot of researches on nominalizations, from theoretical explanations to empirical analyses (Zhu, 2006 ; Chang, 2004 ; Wang, 2016). They all found that nominalizations are frequently used in comparatively formal discourses and they possess powerful functions, such as

increasing the formality, decreasing subjectivity and promoting coherence. However, scholars seldom combine quantitative study and qualitative discussion together to analyze features of each type of nominalization. Therefore, based on the grammatical metaphor theory proposed by Halliday, this study aims to calculate frequencies of different types of nominalizations and analyze their features in abstracts.

II. Theoretical Framework

a) Grammatical Metaphor

According to Halliday (2000: 341-342), "we recognize that lexical selection is just one aspect of lexicogrammatical selection, or wording; and that metaphorical variation is lexicogrammatical rather than simply lexical. There is a strong grammatical element in rhetorical transference, and once we have recognized this we find that there is also such a thing as grammatical metaphor, where the variation is essentially in the grammatical level forms although often entailing some lexical variation as well." Hence, an expression must have two variations: congruent and metaphorical forms. Congruent forms are the typical ways in which experience is construed. The "typical" is "the way it is commonly said or the way it is said in the absence of any special circumstances" (Halliday, 2000: 343). However, the metaphorical form adds further semantic features. This is a central resource for expanding the meaning potential of language, which is known as grammatical metaphor.

b) Nominalization

Halliday (2000) believes that nominalization is a process in which any elements or group of elements are made to function as a nominal group in the clause. He notes that nominalization is the single most powerful resource for creating grammatical metaphor. By this device, processes (congruently worded as verbs) and properties (congruently worded as adjectives) are reworded metaphorically as nouns; instead of functioning in the clause, as Process or Attribute, they function as Thing in the nominal group (Halliday 2000:352). By nominalizing, the nominalized necessarily goes through lexical-grammatical and semantic change. Generally speaking, nominalization is the major resource producing high lexical density, it possesses the features of condensed information, concise expression, compact structure and strong logic. Hence, nominalization is

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often used in scientific, legal and political style, because these styles are comparatively formal (Hu Zhuanglin, 1989).

c) *Halliday's Classification of Nominalization*

Halliday (1996) identified thirteen types of ideational metaphor, in which there are 5 types of nominalizations, and they are transformed from quality, process, circumstance, relator, zero to entity respectively. as the following table shows,

Table 1: Five types of nominalizations

Semantic functions	Grammatical functions	Lexicogrammatical class
1) quality ⟶ entity	epithet ⟶ thing	adjective ⟶ noun
2) process ⟶ entity	i event ⟶ thing ii auxiliary ⟶ thing	verb ⟶ noun
3) Circumstance ⟶ entity	minor process ⟶ thing	preposition ⟶ noun
4) relator ⟶ entity	conjunctive ⟶ thing	conjunction ⟶ noun
5) entity ⟶ (expansion)	head ⟶ modifier	noun ⟶ various

It can be seen from table 1 that they all belong to nominalizations. Process nominalization is often realized by the transference of a verb to a noun. Quality nominalization refers to any nominalized word or word group derived from an adjective. Circumstance nominalization is often realized by the transference of a prepositional or a prepositional phrase to a noun. Relator nominalization refers to any nominalized word or word group derived from a conjunctive. Zero nominalization is often realized by the transference of zero to noun.

III. Research Method and Instrument

a) *Data Collection*

The corpus of this study is made up by 60 abstracts which are selected from *The Modern Language Journal* and published from 2012 to 2016. The MLJ is a very famous linguistics journal with high impact factor in comparison with other linguistics journals, therefore, articles published in it are scientific and professional, which deserves profound analysis. Data collected in this corpus covers various topics, in which there are 14 articles concerning with Second Language Acquisition, 14 articles focusing on classroom teaching, 7 articles paying attention to the applied linguistics, 1 articles discussing computer assistant learning, 6 articles talking about sociolinguistics, 5 articles interpreting grammar leaning. Moreover, other 7 articles are about Spanish learning, German learning and English learning. It can be seen that there are a lot of topics involved in the corpus. Detailed information are presented in the following figure,

Table 2: Sample information

Research topics of 60 abstracts	Second Language Acquisition (14), Classroom teaching (14), Applied linguistics (7), Computer assistant teaching (1), Sociolinguistics (6), Grammar learning (5), Spanish learning, German learning and English learning (7)

b) *Research Instruments*

This study mainly uses CLAWS and AntConc 3.2.1 to annotate and retrieve all the nominalizations, in which the tool concordance will help author identify all the nominalizations, then delete the words which do not belong to nominalizations with the assistance of manual sorting. The accuracy of identification of nominalization cannot be guaranteed by only using Ant Conc and CLAWS, so manual sorting will also be applied to identify five types of nominalization. For example, the noun form of a word may be identical with its verbal form, such as "this study examines", under this circumstance, "study" is not transformed from verb, so it cannot be regarded as nominalization of process. At this time, concordance tool may show that this situation belongs to nominalization. In order to avoid this problem and carry out a thorough study, manual sorting must be used to double check the results.

IV. Results and Discussion

a) *Frequencies of Five Types of Nominalization*

The author calculates all the nominalizations used in abstracts, which appear 1326 times. Process nominalizations appear 1125 times and quality nominalizations appear 178 times. While there are 3 excerpts of circumstance nominalizations. Relator nominalizations only appear 14 times. The last type is zero nominalization, which appear 6 times.
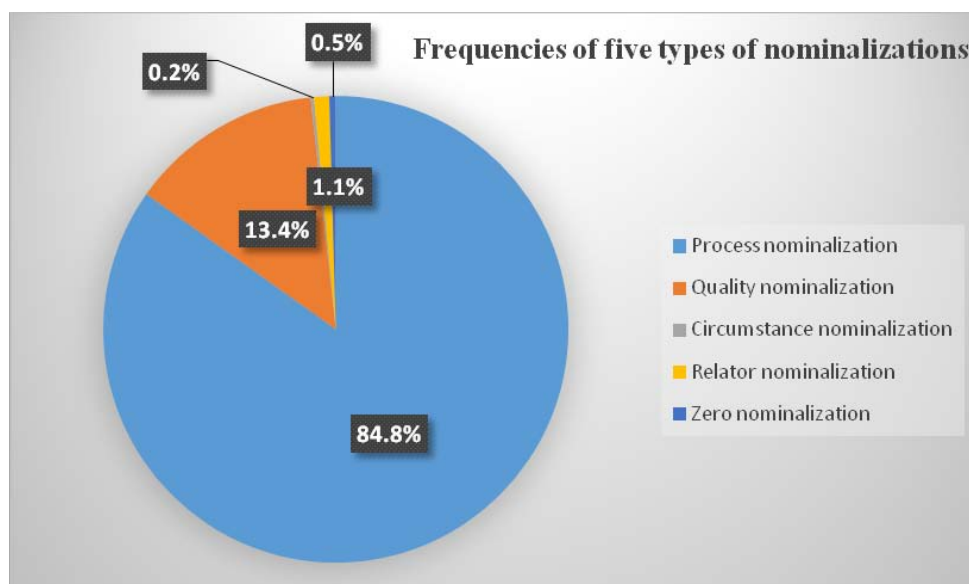
Figure 1: Frequencies of five types of nominalization

Figure 1 reveals that the nominalization of process is most frequently used in abstracts, which accounts for 84.8% of the total number of nominalizations. Quality nominalization ranks second, occupying 13.4%. However, nominalization of circumstance and nominalization of relator only account for 0.2% and 1.1%, respectively. Furthermore, the author only found 6 instances of nominalization of zero and the conclusion is therefore that this kind of nominalization seldom occurs in this type of discourses.

b) Process nominalization

There are 1125 examples of process nominalization in 60 abstracts, in which there are many repetitive words, and the following figure summarizes 6 types.
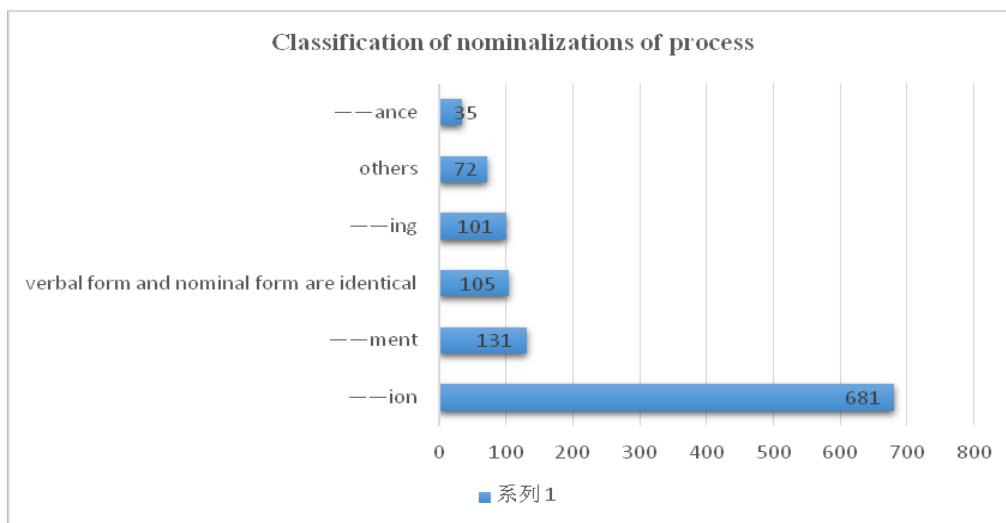

Figure 2: Process nominalizations

Figure 2 displays 6 types of nominalization of process, in which 5 major types are frequently used by writers. Calculating results reveal that authors often use suffixes to form nominalizations, such as -ion, -ment, -ance, -ing and verbal forms and nominal forms are identical. These five types occur 1053 times and account for 93.6%. Additionally, the most two frequently used type are the words which end with -ion and -ment, these two suffixes are the most common way to transform verbs into nouns in 60 abstracts, in other words, transforming from processes to entities, especially for -ion, which occupies 60.6%.

From figure 2, it can be seen that abstracts writers use a lot of process nominalizations to describe research procedures or results (Eggins, 1994), for example, in order to improve the formality and objectivity of the abstract, they often use *evaluation of sth*, *examination of sth* instead of *sb evaluate*, *sb examine*. Meanwhile, in this way, unnecessary information are deleted and expression become briefer.

c) Quality nominalization

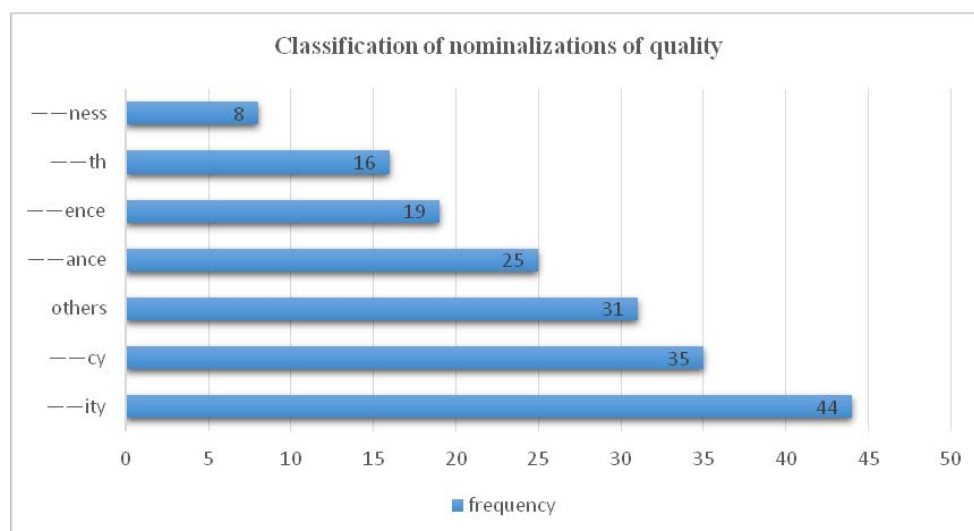As for quality nominalization, there are 178 examples, as figure 3 shows

Figure 3: Quality nominalizations

From this figure it can be seen that nominalization of quality also takes the form of adding suffixes and there are mainly six types of suffixes, like -ity, -cy, -ance, -ence, -th and -ness, which occupy 82.6%.

It is obvious that -ity and -cy are the most frequently used types, especially for -ity, which accounts for 24.7%. In this way, quality is transformed into entity, thus original adjectives no long modify nouns, on the contrary, they become statements, which can be modified by others, hence information become diversified.

In abstracts, expressions like *complex*, *possible*, *accurate* seldom appear owing to the genre of abstract, as a kind of academic writing, language in abstract is required to be professional and objective (Day, 1998). That's the reason why nominalization of quality are often employed to state a fact rather than express opinions.

d) Circumstance nominalization

The third type is circumstance nominalization, which rarely occurs in abstracts owing to its complex transformational processes. Moreover, using this type of nominalization will weaken the conciseness of abstracts. There are only 3 instances, for example, in favor of-supporting, take-duration and because of-reason. This type is difficult to change the word classes, because they serve as as a process "associated with or attendant on the process", so they rarely occur in abstracts.

e) Relator nominalization

Additionally, nominalization of relator only accounts for 1.1%, which is not so common, because the transformational processes are complicated and difficult to understand. Besides, for the sake of improving the conciseness of abstract, writers seldom use nominalization of relator to express their opinions (Martin, 1992). Hence, in 60 abstracts, only three major types of relator nominalizations are identified, such as in order to-goal/aim/purposes, because/due to and if-condition. It can be concluded that nominalization of relator is mainly used to express logical relationship, in this way, dynamic action is transformed into static statement, consequently, language become precise and objective.

f) Zero nominalization

The last type is zero nominalization. Because it does not involve a transformational process, to a large extent, it serves as appositive in the sentence. For example, authors always use this issue, a problem/phenomenon that... to lead a clause. Because nominalization of zero is not converted by congruence, and these words are abstract words, in other words, they are a kind of categorization toward abstract thinking instead of experience.

In conclusion, from the above listed tables and figures, it seems that most of the writers are inclined to use the nominal forms of verbs or adjectives and they seldom use the nominalization of conjunctions or prepositions.

V. Functions of Nominalizations in Abstracts

a) Functions of Process Nominalizations

i. Condensing information

Statistics show that there appear 1125 examples of process nominalizations in 60 abstracts, and features of them are concluded. First, process nominalizations can condense information, thus shortening the length of abstracts. According to the

theory of transitivity system, process is the core of a clause and it is expressed by verbs. Through the use of nominalization the information expressed by a whole clause is condensed (Quirk & Crystal, 1985). The nominal forms of verbs contribute to condensing information and reconstruct experience. This is best demonstrated by looking at an example.

1. *Analysis* of two *conversations* showed a notable *increase* in the learner's *production* of incomplete *utterances*. (sample 28)

Example 1 contains nominalizations of verbs: *analysis, conversations, increase, production* and *utterances*. This sentence is short but full of necessary message. However, it needs more than three clauses if the same meaning is conveyed in congruent form.
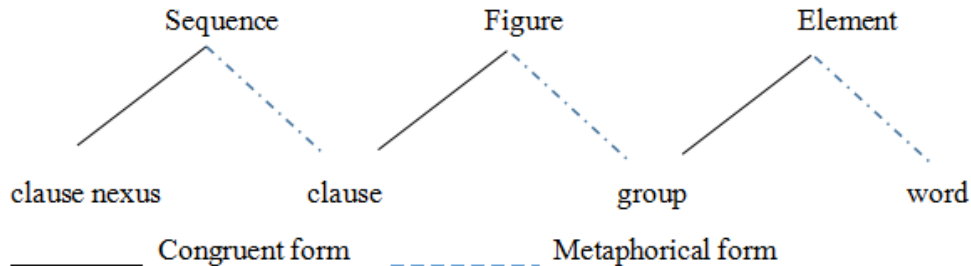

Figure 4: Rank shift of grammatical metaphor Cited from Halliday (2004)

From figure 4 it can be seen that through nominalization, the original clause goes through several steps, and several clauses are condensed into nominal groups or nouns. These five nominalizations link several clauses and condense the length of the original congruent form. In addition, *a* and *notable* have been added before *increase*, which serve as a quantifier and a modifier, respectively. As mentioned above, one advantage of transforming process into an entity is that nominal groups may contain modifiers, thus enhancing the semantic meaning. In this example, *increase* is transformed into a noun, hence it possesses the quality of "thingness", and it considered as an entity instead of a process (Swales, 1990). The modifier plays an important role in expanding the nominalization lexically; hence the meaning becomes more vivid and precise. Moreover, the focus of the sentence is shifted from the action increase to a noun form increase, which can be modified by adjectives.

ii. *Increasing the abstraction*

The MLJ is a high-quality linguistics journal with very high impact factor, hence, writers who publish their articles in MLJ are professional researchers or experts with good language proficiency. Additionally, they are familiar with the academic genre, and their abstract thinking is advanced, and they are accustomed to making logical analyses. They attach great importance to rational thinking. Consequently, they are adept at shifting clauses, clause complexes or grammatical units down to noun phrases, thereby achieving "reconstructing experience" and "abstracting" (Chang 2004). Take the following two sentences as examples.

a) *Two groups speak so differently that the researchers focus on their accents.*

b) *The different accents of two groups drew great attention* among the researchers. (sample 26)

In this example, sentence a is a congruent form, and it is also a clause complex made up by two clauses, a super ordinate and a subordinate clause. It constructs a phenomenon, which is a sequence formed by two schemata. In the corresponding metaphorical form b, this sequence is constructed by one schema and expressed in one clause. Figure 5 displays the relation between congruent form and incongruent form in expression.
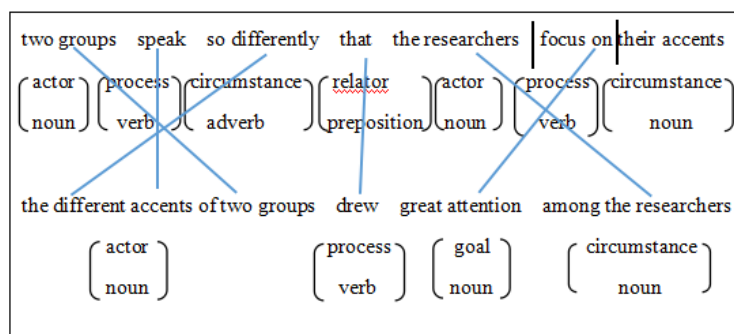

Figure 5: Corresponding relation between congruent form and incongruent form in expression

In fact, Figure 5 reveals the concept of "rank shift" in grammatical metaphor. Through the use of nominalization of process, a complex clause becomes a clause, and then a clause is transformed into noun phrase. This kind of rank shift accompanying with the transformation of grammatical category; as a consequence, the system has been expanded. In this way, change of process brings about a series of chain reactions: actor, circumstance, relator in the process will all change accordingly. Nominalization of process reconstructs experience into thing, hence increases the level of abstraction of discourses, and make expressions more diversified (Van Dijk, 1990).

iii. *Forming fixed collocation patterns*

After calculating all the nominalization, the author found that many nominal forms of verbs are used in fixed collocation patterns. They often collocate with prepositions, such as *of, to, with, between* etc. The following table shows the most frequently used prepositions complementing nominalizations of process in the data.

Table 3: Frequency of prepositions heading post-nominal modifiers of process nominalization

Prepositions heading post-nominal Modifiers of nominalization of process	of	136
	for	55
	in	47
	to	41
	between	32
	with	28

Table 3 shows that nominalizations in this category are often post-modified by prepositional phrases. The most frequent preposition to head such phrases is *of*. Using process nominalization post-modified by prepositional phrases can make expressions more diversified. For example, in abstracts expressions like *the analysis of, access to, suggestions for, interaction between, engagement with, increase in* are used to convey the same meaning which are originally expressed by verbs. In this way, processes are all transformed into entity, and the clause expresses static meaning instead of dynamic meaning.

c) *Functions of quality nominalizations*

i. *Achieving impersonalization*

Nominalization of quality accounts for 13.4% in abstracts, which ranks second. On the one hand, it is relatively frequently used in abstracts because it can achieve impersonalization, which is the requirement of academic papers. As an academic genre, expressions in abstracts must be objective, so authors try to avoid using subjective language. Such as use of first person pronouns or some adjectives which entailing the sense of evaluation or judgment. Hence, nominalization of qualityare frequently used by authors to achieve impersonalization and use thing as subject. Because

nominalization of quality achieves the function of elimina-ting subjectivization, making it become object before people make a judgment and not subject to negotiability. For example,

1. *Study results reveal that grammatical accuracy with respect to German word order... (sample 35)*

In this example, *accuracy* is transformed from its corresponding adjective forms. The writer of abstract chooses to use a nominal form which has the effect that what is presented comes across as a fact rather than an opinion. If the writer of abstract had instead chosen to use *sth is accurate*, this would come across as subjective and would be less convincing to readers. Thus it requires author to create the sense of impersonalization. Moreover, trying to convince readers of research quality is very important, and authors always use quality nominalizations to show the validity of their research, but at the same time they will not point out advantages or superiority of their researches directly, such as involving another agent in the sentence. It is found that "thing" always serves as subject when writers employ quality nominalizations. So using quality nominalizations can achieve impersonalization, at the same time, writers convey the implied evaluation toward their own researches.

2. Increasing the distance between readers and writers

When investigating features of quality nominalizations, another relatively opposite feature is obtained. Under some circumstance, using quality nominalizations is not necessary from the perspective of starting point of writing abstract. Due to the practical aspect of abstract writing, abstract serves as a hook to attract readers' attention and interest. Sometimes, use nominalization of quality may obscure the relationship between writers of abstracts and the contents described, as a consequence, increasing the distance between readers and writers. For example,

3. The finding underscores the *importance* of validating the assumptions about the relationship between task design and its putative effects on complexity. (sample 57)

This excerpt shows the writers' own judgment or evaluation of their studies. These kinds of expressions may yield a sense of non-negotiable and distant statement of fact, hence influencing readers' attitude. This means that before readers are able to make their own judgment, writers have already employed nominalization of quality to presuppose a fact or make readers accept the fact. Expressions like *importance* will weaken the emotional strength. For that reason, using quality nominalizations will not arouse readers' emotional sympathy. Additionally, as mentioned above, some quality nominalizations can achieve impersonalization to some extent, however, *importance* is an exception. Because writers of abstracts intend to convince readers of the quality of their research, they

employ this word purposely to show their evaluation. In other words, this is not an objective judgment.

ii. *Functions of circumstance nominalizations*

Nominalization of circumstance seldom occurs in abstracts according to the quantitative results.

4. *Supporting* several existing suggestions for L2 pedagogy in this study to promote more new ideas. (sample 47)

In example 5, the author uses *supporting several suggestions* as a nominal form to replace the original expression *in favor of*. But this sentence seems a little bit awkward, the congruent form may be "this study in favor of several existing suggestions...", it reflects a process of narrating. However, the incongruent form lacks statement. Additionally, Halliday said that circumstance is a kind of additional minor process which is subsidiary to the main one. Instead of standing on its own, it serves as an expansion of something else. So it is complicated to transfer circumstantial elements to nominalization.

Besides, such expressions also belong to nominalization of circumstance, *to-destination* and *with-accompaniment*, in abstracts, and writers of abstracts devote to making their expression understandable and clear, so they will not use these expressions. On the contrary, they use the most direct way to state a fact. What is more if writers of abstracts usually use circumstance nominalization, it will increase the complexity of discourse and make language become too wordy. So it obeys the characteristics of conciseness of abstracts, author seldom uses such type of nominalization.

iii. *Functions of relator nominalizations*

Similar to nominalization of circumstance, nominalization of relator is rarely used in abstracts, with a ratio of only 1.1%.

5. Our *aim* in this final article is to complement... (sample 45)

In this sentence, original expression *in order to* is replaced by *our aim.* For one thing, as discussed above, abstracts pay more attention to state a fact and attach less importance to the process of reasoning. Here, writer chose to use *aim* instead of *in order to* to hide the relation marker, thus making the logical link between two sentences become vague and expressions become less objective. With respect to the properties of abstracts, to some degree, nominalization of relator does not conform to the objectivity of language expressions required in abstract.

On the other hand, relators are the elements interpreting the logical semantic relationship between two processes (Halliday, 2000:73). A compound sentence is made up of two logically related figures. The semantic relationship between the two figures is achieved by relators. In this sentence, original logical marker is transferred into nominalization, thus it is difficult to identify the relationship between two sentences. As a result, nominalization of relators seldom appears in abstracts as well.

iv. *Functions of zero nominalizations*

This type of nominalization has been ignored by many linguists. In the framework of systemic functional grammar, it is mentioned without a clear definition. Since this class of words undergoes no type of transformation from one word class to another; instead, they are a kind of categorization toward abstract thinking instead of experience. However, there are still some examples considered as transformation from zero to entity, such as *the problem of, the fact of, the phenomenon of, an issue that*. These expressions belong to nominalization of zero. From the perspective grammatical elements, they serve as apposition. Their functions are to further explain the previous clause, offering a more specific description.

Nevertheless, this kind of nominalization is not often used in abstracts. First, because it does not involve a transformational process, it is difficult to distinguish the congruent form from the incongruent form. The identification of nominalization of zero is complicated. Second, condensing information is a crucial feature of abstracts, while the use of nominalization of zero adds a lot of unnecessary depictions. Besides, according to the concept of "rank shift", writers of abstracts prefer to use clause or phrases to express their meaning. Expressions like the problem of can be substituted by a which-clause or an independent clause. Thereby, the frequency of the nominalization of zero is relatively low, and only accounts for 0.5%.

VI. Conclusion

The present study investigates the features and applications of five types of nominalizations in abstracts, results reveal that each type of nominalization possess different features and they have different applications in concrete context. First, in abstracts, process nominalization can condense length of abstracts and increase abstraction, moreover, they are often used in fixed patterns. Second, when using quality nominalizations, researchers need to take two features into consideration. Process nominalizations can achieve impersonalization, but at the same time, they will increase the distance between readers and writers. Furthermore, it is suggested that circumstance and relator nominalizations will increase the complexity of abstracts and weaken the logical link, so writers often avoid using them. The last type is zero nominalization, which is also seldom used in abstracts. Because interpreting from the grammatical level, it serves as appositive in sentence and it is not transferred from congruent form and does not involve change in word class. As a whole, when using different types of

nominalizations, academic writers should take functions of each type of nominalization into consideration and use them appropriately, making abstracts more concise, objective and cohesive.

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